

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 88-055

NPDES No. CA0029360

WASTE DISCHARGE REQUIREMENTS FOR:

SIGNETICS CORPORATION
730 EVELYN AVENUE FACILITY
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Signetics Corporation, hereinafter called the discharger, by application dated October 28, 1987 has applied for issuance of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System (NPDES).
2. The discharger owned and operated an integrated circuits manufacturing facility located at 730 Evelyn Avenue, Sunnyvale, Santa Clara County from 1975 to 1984. The facility is now vacant.
3. Site investigations have disclosed the presence of organic pollutants in soil and groundwater. Solvent materials detected in the groundwater include 1,1,1-trichloroethane (TCA) and trichloroethylene (TCE) at concentrations as high as 2000 ppb. The discharger has investigated the lateral and vertical extent of the contamination and is proceeding with a cleanup operation pursuant to a schedule contained in Site Cleanup Requirements Order No. 88-014.
4. The discharger proposes to contain and cleanup the pollutant plume by extracting groundwater from onsite and offsite wells, pumping to a remote carbon adsorption plant located beneath the Wolfe Road overpass and then discharging to the Sunnyvale East Channel, a tributary of Calabazas Creek and South San Francisco Bay.
5. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for South San Francisco Bay, and contiguous surface waters and groundwater.
6. The beneficial uses of Sunnyvale East Channel, Lower Calabazas Creek, and South San Francisco Bay include:
 - o Contact and non-contact water recreation

- o Estuarine habitat
 - o Fish spawning and migration
 - o Industrial service supply
 - o Navigation
 - o Ocean commercial and sport fishing
 - o Preservation of rare and endangered species
 - o Wildlife habit.
7. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof."
 8. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 7 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.
 9. Exceptions to the prohibitions referred to in Finding 7 are warranted because the discharge is an integral part of a program to clean up contaminated groundwater and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would effect beneficial uses. Should studies indicate chronic effects, not currently anticipated, the Board will review the requirements of this Order based upon section B.1.e.
 10. The basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.
 11. Effluent limitations of this Order are based on the Basin Plan, State plans and policies, U.S. Environmental Protection Agency guidance, and best engineering judgment as to best available technology economically achievable.
 12. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
 13. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge

requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of waste shall not contain constituents in excess of the following limits:

| Constituent | Units | Instantaneous Maximum |
|--------------------------|-------|--------------------------|
| Trichloroethylene | mg/L | 0.005 |
| 1,1,1-trichloroethane | mg/L | 0.005 |
| 1,1-dichloroethane | mg/L | 0.005 |
| 1,2-dichloroethylene | mg/L | 0.005 |
| 1,1-dichloroethylene | mg/L | 0.005 |
| Trichlorotrifluoroethane | mg/L | 0.005 |

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.
3. In any representative set of samples, the discharge of waste shall meet the following limit of quality:

TOXICITY: The survival of rainbow trout fishes in 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam.
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in

concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

- a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

- b. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

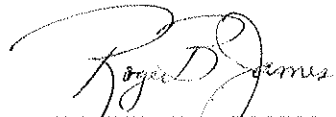
3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this order in accordance with such more stringent standards.

C. Provisions

1. The discharger shall comply with all sections of this order immediately upon adoption.
2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.
3. The discharger shall also notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.
4. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986, except items A.10, B.2, B.3, C.8, and C.11.

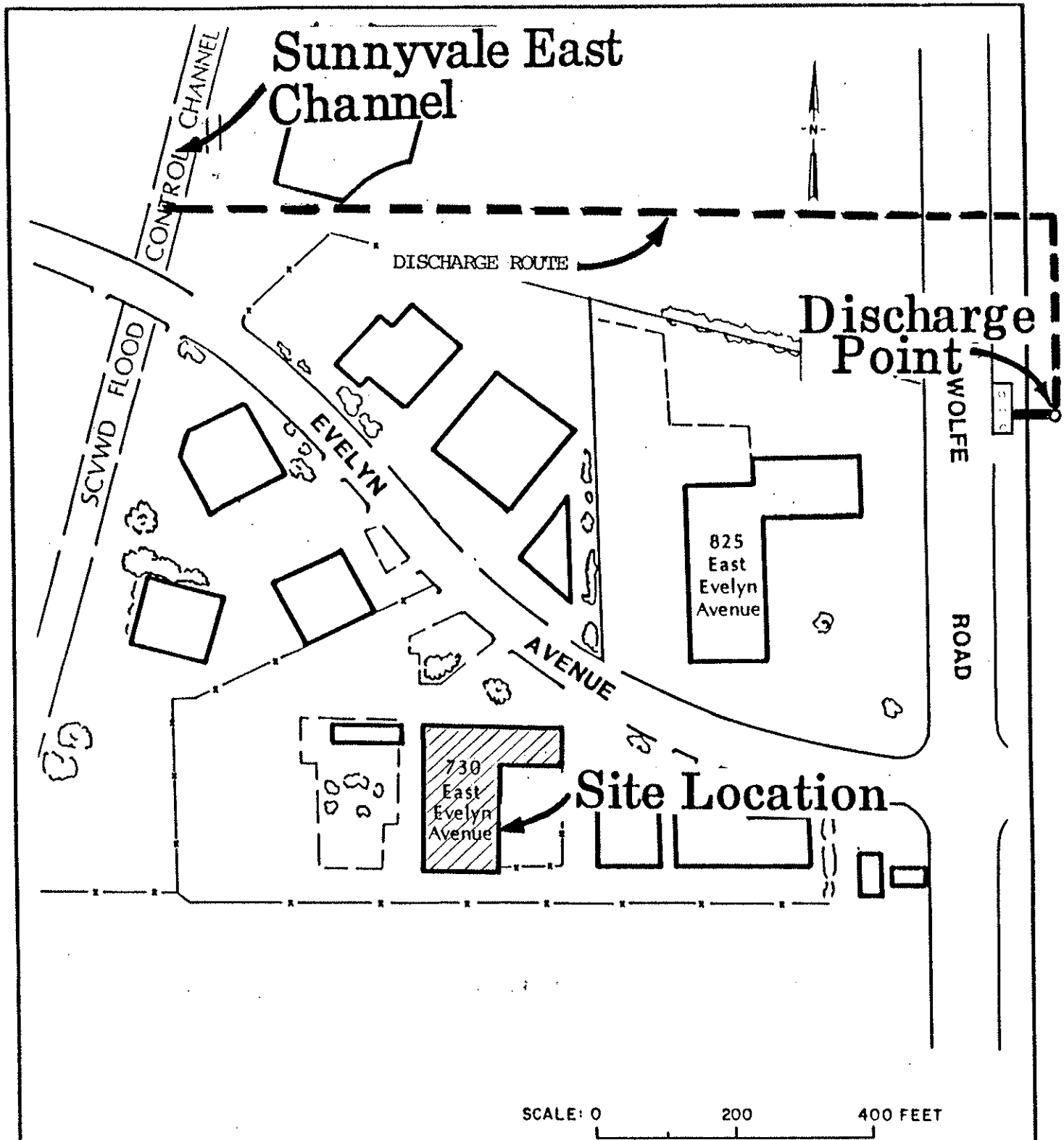
5. This Order expires April 20, 1993 discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
6. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on April 20, 1988.


ROGER B. JAMES
EXECUTIVE OFFICER

Attachments:

Standard Provisions & Reporting Requirements, dated December 1986
Self-Monitoring Program
Site Map



| | | |
|---|---------------|---------------|
| STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION | | |
| LOCATION MAP | | |
| — SIGNETICS CORPORATION 730 EVELYN AVENUE SUNNYVALE, SANTA CLARA COUNTY | | |
| DRAWN BY: MYM | DATE: 11/5/87 | DRWG. NO. 001 |

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

T E N T A T I V E

SELF-MONITORING PROGRAM

FOR

SIGNETICS CORPORATION

730 EVELYN AVENUE FACILITY

SUNNYVALE, SANTA CLARA COUNTY

NPDES PERMIT No. CAO028720

CONSISTS OF

PART A, dated December 1986 and modified January 1987,
including Appendices A through E

PART B, Adopted: April 20, 1988

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Stations

Description

I-1 At a point in the groundwater extraction/treatment system immediately prior to treatment.

B. EFFLUENT

Stations

E-1 At a point in the groundwater extraction/treatment system immediately following treatment (Waste 001).

C. RECEIVING WATERS

C-1 At a point in the Sunnyvale East Channel at least 100 feet but no more than 200 feet down-stream from the storm sewer discharge point.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table I.

III. MISCELLANEOUS REPORTING

If any chemical additives are proposed to be used in the operation of the treatment system it shall be reported 30 days prior to their use.

IV. MODIFICATION TO PART A

A. Deletions:

Sections D.2.e, D.2.g, D.3.b, E.1.e, E.1.f, E.3., and E.4.

G.4.e.1 Influent and Effluent Data Summary Reports shall be submitted only to the Regional Board Executive Officer, not to the EPA.

B. Modifications:

G.4 Written reports under G.4 shall be filed each calender quarter, once in January, April, July, and October.

G.4.b The report format shall be prepared in a

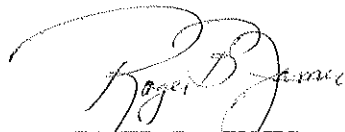
format acceptable to the Executive Officer. The example in Appendix A is provided as guidance.

G.4.e The report format will be prepared in a format acceptable to the Executive Officer. NPDES Discharge Monitoring Report, EPA Form 3320-1, is provided as guidance.

G.5 By January 30 of each year, the discharger shall submit, in place of the quarterly report, an annual report to the Regional Board covering the previous year.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 88-055.
2. Was adopted by the Board on April 20, 1988.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or Regional Board.



ROGER B. JAMES
EXECUTIVE OFFICER

Attachment: Table I

T A B L E I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

| | | | | | | |
|---|-----|--|------|--|-----|--|
| Sampling Station | I-1 | | E-1 | | C-1 | |
| Type of Sample | G | | G | | G | |
| Flow Rate (Gal/Day) | W | | W | | | |
| BOD, 5-day, 20 C, or COD (mg/l) | | | | | | |
| pH (units) | | | M | | 2/Y | |
| Dissolved Oxygen (mg/l and % Saturation) | | | | | 2/Y | |
| Temperature (C) | | | | | 2/Y | |
| Total Suspended Solids (mg/l) | | | | | | |
| Fish Tox'y 96-hr. TL % Surv'l in undiluted waste | | | Y | | | |
| GC/MS Scan (EPA 624) (mg/l) | | | Y | | | |
| Trichloroethane (TCA) Trichloroethylene (TCE) | M | | 2/M* | | 2/Y | |
| Priority Pollutant Scan (Including Metals) | | | O | | | |

LEGEND FOR TABLE

G = Grab Sample
 W = Once each week
 M = Once each month
 Q = Quarterly, once in March, June, September, and December
 2/Y = Once in March and September
 2/M* = Weekly for the first three (3) months of startup of operation;
 reduced to twice a month thereafter.
 Y = Once a year
 O = One time only within 3 months of startup or upon
 commencement of discharge